

**CITY COUNCIL  
COMMUNICATION:**

**03-261**

**AGENDA:**

JUNE 9, 2003

**SUBJECT:**

PROFESSIONAL  
SERVICES  
AGREEMENT -  
DOWNTOWN  
TRAFFIC SIGNAL  
SYSTEM PROJECT

**TYPE:**

**RESOLUTION**  
ORDINANCE  
RECEIVE/FILE

**SUBMITTED BY:**

JEB E. BREWER, P.E.  
CITY ENGINEER

**ITEM 82B**

**OFFICE OF THE CITY MANAGER  
CITY OF DES MOINES, IOWA**

**SYNOPSIS —**

Approve and authorize the execution of Supplemental Agreement No. 1 for professional services with Snyder & Associates, Inc., (Stephen P. Rowe, President, 501 S.W. Oralabor Road, P.O. Box 1159, Ankeny, Iowa, 50021-0974), in conjunction with the Downtown Traffic Signal System project.

**FISCAL IMPACT —**

Compensation to the consultant for work covered by the Agreement shall be made at an hourly rate not to exceed \$145,820. Funding for this Supplemental Agreement will be \$116,656 (80%) Federal Congestion Mitigation and Air Quality (CMAQ) funds, and \$29,164 (20%) City TIF bonds. Funding is available in the adopted 2003-04 / 2008-09 Capital Improvements Program, Project TFC093, Funds CP038, ORG ENG990000.

**RECOMMENDATION —**

**Approval of Supplemental Agreement No. 1 with Snyder & Associates.**

**BACKGROUND —**

On September 3, 1996, by Roll Call No. 96-3055, the City Council approved a professional services agreement with Snyder & Associates, Inc. for three phases of engineering services on this project: Phase One - Alternatives Analysis and Conceptual Design; Phase Two – Preparation of Final Plans and Specifications for signal system construction and preparation of signal timing plans; and Phase Three - certain construction administration and inspection services. Snyder & Associates, Inc. subcontracted with the firm of Kimley-Horn and Associates, Inc. (Wayne Kurfees, Associate, 12700 Park Central Drive, Suite 100, Dallas, Texas 75251), to provide traffic signal system and communications system expertise in the analysis and design of this project.

On July 26, 1999 by Roll Call No. 99-2314, the City Council approved the Design Concept Report and authorized Snyder & Associatesto proceed with preparation of final plans and specifications for furnishing

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and installation of the traffic signal system, communications network and related items as identified in the Design Concept Report. Council also authorized Snyder & Associates to proceed with an RFP for procurement of the "high-tech" system software and related computer hardware items identified in the report.

As identified in the Design Concept Report, the new signal system will reduce vehicle stops, traffic signal delay, and fuel consumption, which would in turn reduce vehicle emissions and improve air quality in the downtown area. The computer analysis estimate of the Annual Performance Measures estimates that the traffic control system will provide the following benefits: 18 percent reduction in traffic signal delay (over 500,000 vehicle-hours per year); 19 percent reduction in vehicles stops (over 6.2 million fewer stops per year); 10 percent reduction in travel time (over 500,000 vehicle-hours per year, primarily through reduction in signal delay); and 11 percent reduction in fuel consumption (over 700,000 gallons of fuel saved per year). These traffic flow improvements result in an estimated 11 percent reduction in Annual Air Pollutant Emissions, which will remove the following amounts of pollutants from the air downtown: over 50,000 kilograms (kg) (110,000 pounds) of carbon monoxide (CO); nearly 10,000 kg of nitrous oxide (NO); and nearly 12,000 kg of volatile organic compounds (VOC).

Snyder & Associates has completed the design for the traffic signal system, and the Iowa Department of Transportation (IDOT) has taken bids for the installation of the traffic signals and communications system. Included as part of this item on the June 9 agenda is the designation of low bidder and award of contract to The Waldinger Corporation (Tom Koehn, CEO, 2601 Bell Ave., Des Moines, IA 50321). The low bid is in the amount of \$1,793,691.70, which is \$394,608 (18.0%) below the estimate of \$2,188,300.

This project design has clearly taken much longer than originally expected, but has produced a very good final product. The long design time has been primarily caused by the need to redesign the communications system from the approved design concept, changes in evolving signal system technology over time, and the addition of approximately 15 new traffic signals in the downtown area to be incorporated into the signal system and the system timing plans.

The original communications system was based on removing existing old signal interconnect wire from MidAmerican Energy Company (MEC) ducts, where it has existed since the 1950s without charge, and replacing it with modern fiber optic cable. MEC advised the City that any new cable installed in their conduit system would be charged their normal lease rate, which was \$2.10 per foot per year. Based on the large amount of cable involved, the resulting lease cost of over \$30,000 per year, with no control over future increases, was deemed unacceptable. Because of the very high costs of installing new conduit

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in the downtown area, complete reconstruction of a City-owned conduit system was not financially feasible within the project budget.

The consultant team and Traffic and Transportation staff spent considerable time and effort to develop a modified communications system that would be within the project budget. This system incorporates new conduit and fiber optic cable that has been installed in the downtown area through various utility and private communication company projects. The City's cost for installing conduit and fiber in conjunction with these projects has been paid for with funds from the CIP project, including 80% Federal funds.

The final design will provide several significant advantages for the city, and also provides very substantial cost savings compared to the original design concept.

1. The system will be more fully integrated into the City-wide communication network developed by the Information Technology Department.
2. The system design also allows integration with the IDOT Traffic Management Center being developed for the I-235 project.
3. The final communication design incorporates nearly 17,000 feet of 3-inch conduit, 69 handholes and over 13,000 feet of fiber optic cable that was not available at the time the conceptual design was completed. The estimated value of this new infrastructure is approximately \$800,000.
4. The final communications design also provides significant annual cost savings from not leasing conduit space from MidAmerican Energy. Based on an estimated 15,000 feet of conduit, and the MEC lease rate of \$2.10 per foot, the final design will save approximately \$31,500 annually in the City's operating budget.

The City now wishes to obtain additional Professional Services to proceed with necessary additions to the documents and to proceed with system software procurement and construction phase services. The system software RFP has been finalized, and is ready to be sent out to potential vendors for them to submit proposals. The City and the design team will evaluate the proposals, and select the "best fit" for the project requirements and budget. The estimated cost for the central system software is \$570,000, which is available in the project funding and project budget. The specified software requirements can be met with several existing signal software packages, without expensive "customizing" for Des Moines.

The recommended vendor, and contract for providing, installing and integrating the software into the field controllers and communications system will be presented to the Council for approval in approximately

	<p>three months. This schedule will allow the software to be available as the signal and communications system construction is being completed.</p>
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